

Notice of Allowability

Application No.

10/700,546

Examiner

Joseph L. Perrin, Ph.D.

Applicant(s)

TSUCHIYA ET AL.

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed 05 November 2003.
2. ☒ The allowed claim(s) is/are 12-15 (renumbered as claims 1-4).
3. ☒ The drawings filed on 05 November 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/650,367.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 20031105
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20040714.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT & STATEMENT OF REASONS FOR ALLOWANCE

Examiner's Amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Ms. Rhonda L. Barton on 13 July 2004.
3. The application has been amended as follows:

Claim 14:

Delete "according to claim 1 is employed." and insert therefor the following:

--further comprises:

a rotary disk on which a fluid flow path is formed;

a through hole formed in a central section of the rotary disk; and

a plurality of wafer rests provided on an upper surface of the rotary disk,

wherein a wafer is placed on the wafer rests, above the rotary disk with a gap therebetween, and

wherein when the rotary disk is rotated, a fluid in the fluid flow path is discharged outwardly by centrifugal force due to rotation, thereby a reduced pressure is created in the fluid flow path and kept as far as the rotary disk is rotated, through a process in which a fluid is drawn by sucking force of the reduced pressure from the lower surface side of the rotary disk through the through hole, and the fluid drawn is supplied onto the upper surface of the rotary disk to be outwardly discharged in a continuous manner passing through the fluid flow path, with the result that the wafer is drawn downwardly by the sucking force of the reduced pressure and fast held on the wafer rests while rotating.--

Claim 15:

Delete "12, wherein the wafer rotary holding apparatus according to claim 2 is employed." and insert therefor the following:

--14, further comprising:

fluid supply means for supplying a fluid forcibly through the through hole from the lower surface side of the rotary disk,

wherein the fluid is supplied through the through hole in a forced manner from the lower surface side of the disk while keeping the reduced pressure.--

Allowable Subject Matter

4. The following is an examiner's statement of reasons for allowance: The prior art of record fails to teach or reasonably suggest each and every limitation of the instant invention. Specifically, the prior art of record does not teach or reasonably suggest the claimed wafer treating apparatus having multiple annular waste troughs vertically movable relative to a rotary wafer holding apparatus and vertically movable relative to each other, which is disclosed as an essential element of claimed invention, as described in independent claim 12.

5. For at least the foregoing reasons, claims 12-15 (renumbered as claims 1-4) are believed to recite patentable subject matter.

6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 2002/0074020 to Ono *et al.*, which discloses a wafer cleaning apparatus with a plurality of vertically movable annular waste troughs;

US 6,159,291 to Morita *et al.*, which discloses a vertically movable annular collecting cup;

US 6,159,288 to Satou *et al.*, which discloses a wafer cleaning apparatus with annular waste trough;

US 5,989,342 to Ikeda *et al.*, which discloses a rotary substrate holder with vertically movable annular collection cup;

US 5,772,764 to Akimoto, which discloses a rotary coating apparatus with multiple collection cups;

US 5,608,943 to Konishi *et al.*, which discloses a resist processing apparatus with annular waste trough; and

US 4,982,694 to Moriyama, which discloses a wafer coating apparatus with annular waste trough.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is

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(571)272-1305. The examiner can normally be reached on M-F 7:00-4:30, except alternate Fridays.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael E. Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Joseph L. Perrin, Ph.D.
Examiner
Art Unit 1746

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PRIMARY EXAMINER
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